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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/619,917	07/20/2000	Toshio Nomura	49982(551)	3874

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BOSTON, MA 02205

EXAMINER

TRAN, NHAN T

ART UNIT	PAPER NUMBER
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2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 09/619,917	Applicant(s) NOMURA ET AL.	
	Examiner Nhan T. Tran	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 11/20/2006 have been fully considered but they are not persuasive.

The Applicant asserts:

(1) In Christian, there is no teaching or suggestion to take a single image at a first predetermined time after a shutter button is manually pressed. Rather, as shown in Fig. 2 of Christian, the images taken include a video sequence of ordered frames 35 comprising a plurality of frames 34 that can be produced at a rate of 30 frames per second (Remarks, page 6).

(2) Christian is silent with respect to the claimed scheme in which a background image is updated when only a single source image is taken (Remarks, page 6).

(3) Also, in the present invention, after a first period of time elapses and before the second period of time elapses, there is a period of time without shooting an image. This feature is not taught or suggested by Christian, which deals with shooting a video, as presented above (Remarks, page 6).

(4) Also, claim 3 would not have been obvious over Christian in view of Parulski because Parulski explicitly teaches away from this modification (see MPEP § 2145 X.D.2.). Parulski explicitly teaches to keep the background the same for the first and second images. Specifically, at column 3, lines 8 - 19, Parulski teaches: "The algorithm works best when the camera focus and exposure setting for the second exposure are

the same as for the first exposure. This condition minimizes the difference of the image background between the two exposures. Although it is possible to have a different exposure setting for the second exposure and compensate for it, knowing the camera and system calibration, the procedure is simplified by keeping the exposure setting for the second exposure the same as the first. If the camera focus or exposure setting is not maintained, the change needs to be compensated before applying the following processing.” (Emphasis added).

In response, the Examiner understands the Applicant's arguments but respectfully disagrees with the Applicant's assessment of the claims as follows:

(1) As addressed in the previous office action, a single image is taken at **every 1/30 second**. Indeed, only a single image is outputted in a predetermined period of 1/30 second (col. 8, lines 6-14). Furthermore, the imaging system of Christian must require an initial shutter operation command from a user (at least during setup of the system that is manually performed by the user) for capturing an image in order for the system to function as disclosed. The shutter is also inherently located within the imaging system (either in the camera 12 or in the imaging processing system 16) as discussed in claim 1 in the previous office action. Thus, the limitation “said shutter button is manually pressed” is also anticipated by Christian.

(2) The claims do not necessarily require “a background image is updated when only a single source image is taken.” The claims require “only a single image taken when a first predetermined period of time is measured” which is met by the single image outputted in every 1/30 second as discussed in (1) above. It is further required by the

claims that "said first image is updated by using an image of a region other than the object region of said second image every time a prescribed period is elapsed." which is also met by the disclosure of Christian as addressed in the previous office action and col. 9, lines 11-20 and col. 8, lines 55-67 in which the background image (42) is updated every 5 seconds by using the background portion of an image (44) without using the object area (using a region other than the object region) of the single image (44). It should be noted that each of images 42 and 44 is a single image outputted at 1/30 second as discussed above.

(3) Nowhere in the claims requires "after a first period of time elapses and before the second period of time elapses, there is a period of time without shooting an image."

(4) The Applicant's cited portion of Parulski for conclusion of "Parulski explicitly teaches away from the modification" is corresponding to steps 10, 14, 16, 20 and 23 in Fig. 1 of Parulski. However, the modification is not relied on these steps but simply relied on steps 26 & 30 of Fig. 1 as stated in the previous office action, wherein a prepared background (a pre-stored background 28) is used to replace the background (not the object region) of the captured image.

In view of the above, the Examiner believes that the broadest interpretation of the present claimed invention does, in fact, read on the cited references for at least the reasons discussed above and as stated in the following Office Action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 6, 7, 10 & 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Christian et al. (US 6,421,462 B1).

Regarding claim 1, Christian discloses an image pickup apparatus (Fig. 1) taking a first image including *only* a background but not an object (a background image 42; Fig. 3) and a second image including the object (a background including an object image 44; Fig. 3), and having a shutter button for releasing a shutter (see col. 9, lines 59-64 and col. 7, lines 49-63, wherein “a shutter button” is inherent; it is either located in the camera 12 or on image processing system 16 in order for the imaging apparatus to function as disclosed);

a time measuring portion, measuring a time after said button is manually pressed (see col. 7, lines 49-63; col. 8, lines 9-14 and col. 9, lines 59-64; wherein the time measuring portion is represented by an inherent image sensor controller which provides measurement of 1/30 seconds so as to output an image frame at 1/30 second after the shutter button is initially pressed by the user as discussed in the Examiner’s response above);

an output selecting portion (14, 16 shown in Fig. 1) outputting **only a single image** taken as said first image (the single background image 42 shown in Fig. 3 is taken as one frame in 1/30 sec.) when a first predetermined period of time is measured (1/30 sec.) by said time measuring portion and outputting an image taken as said second image (the background including the object 44 shown in Fig. 3 is taken as another frame in another 1/30 sec.) when a second predetermined period of time is further measured (another 1/30 sec.) by said time measuring portion after the first period of time (see Fig. 3; col. 9, lines 59-64 and col. 8, lines 9-14), wherein the first image is updated by using an image of a region other than the object region of the second image every time a prescribed period (i.e., 5 seconds) is elapsed (see col. 9, lines 11-20 and col. 8, lines 55-67, wherein the background image 42 is updated by using the background portion of the image 44 without using the object area, e.g., the person, after a prescribed period of 5 seconds **or** every one or more captured source image 44 is elapsed).

Regarding claim 2, Christian further discloses a region extracting portion (combined blocks 18-26; Fig. 1) using said first and second images for outputting information of an object region of said second image; and a recording portion (memory 31; Fig. 1, col. 7, line 64 – col. 8, line 5) recording positional information data (i.e., the person's figure represented by pixel signals) of said object region, and one of data representing said second image and image data included in said object region onto a recording region (see Christian, Figs. 3-7, col. 10, line 10 – col. 14, line 67).

Regarding claim 6, see the analysis of claim 2.

Regarding claim 7, as seen in col. 7, lines 49-63 and col. 8, lines 6-14, the imaging apparatus in Christian also comprises a notifying portion (an inherent image sensor controller) for notifying a timing (a clock cycle of 1/30 sec.) at which pickup of said first image is finished (at the end of 1/30 sec.) and a timing at which pickup of said second image is started (at start of another clock cycle of 1/30 sec.).

Regarding claims 10 & 11, Christian discloses all limitations of claims 10 & 11 as analyzed in claim 1.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christian et al. (US 6,421,462 B1) in view of Aono et al. (US 5,267,333).

Regarding claim 8, Christian is silent about recording image data in a compressed form. However, Aono teaches that image data of background and foregrounds or objects are recorded in compressed form so as to reduce quantity of data used in image synthesis without impairing the quality of image. See Aono, col. 3, lines 1-22.

Therefore, it would have been obvious to one of ordinary skill in the art to implement a compression unit in the apparatus of Christian to compress image data

before recording onto the recording portion so that quantity of data used in image synthesis would be reduced to save memory space without impairing the quality of the image as taught by Aono.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christian et al. (US 6,421,462 B1) in view of Parulski et al. (US 5,914,748).

Regarding claim 3, as analyzed in claim 2, Christian discloses a region extracting portion using said first and second images for outputting positional information of an object (the person's figure) of the second image, and a recording portion for recording image data.

Christian does not teach an image composing portion replacing an image in a region other than the object region of said second image with a prepared background image, and recording data of the image composed by said image composing portion onto a recording medium.

Parulski teaches an imaging apparatus in which an image composing portion is implemented to replace a background image (a background region other than an object region) with a prepared background (selected from pre-stored background image in step 30; Fig. 1) after the object is extracted from the background so as to create a new composite image (step 26) and record the new composite image into a recording medium (memory or hard drive). See Parulski, Fig. 1 and col. 2, lines 31-49.

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Christian and Parulski to arrive at the Applicant's claimed invention so that an object image would be quickly and easily composed with any pre-stored background suitable for creating virtual photography without requiring a special colored background nor an experienced user as suggested by Parulski, col. 1, lines 31-35.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christian and Parulski as applied to claim 3 and in further view of Aono et al. (US 5,267,333).

Regarding claim 9, Christian and Parulski are silent about recording image data in a compressed form. However, Aono teaches that image data of background and foregrounds or objects are recorded in compressed form so as to reduce quantity of data used in image synthesis without impairing the quality of image. See Aono, col. 3, lines 1-22.

Therefore, it would have been obvious to one of ordinary skill in the art to implement a compression unit in the apparatus of Christian and Parulski to compress image data before recording onto the recording portion so that quantity of data used in image synthesis would be reduced to save memory space without impairing the quality of the image as taught by Aono.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

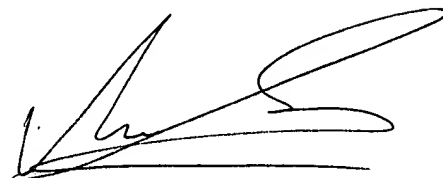
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (571) 272-7371. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2622

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NHAN T. TRAN
Patent Examiner

A handwritten signature in black ink, appearing to read 'Vivek Srivastava', with a stylized, sweeping flourish at the end.

VIVEK SRIVASTAVA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600